Rhodora

JOURNAL OF THE

NEW ENGLAND BOTANICAL CLUB

Vol. 61 May, 1959 No. 725

INTERESTING FUNGI FROM MASSACHUSETTS [1]

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During the summer and fall of 1958, climatic conditions were especially favorable for the growth of fleshy fungi in western Massachusetts and a number of rare or unusual species appeared. Among these were several agarics about which there is little information in the literature since the original descriptions. *Amanita cinereoconia, Clitocybe fellea, C. socialis, Hygrophorus basidiosus* and *H. flavodiscus,* are described here in order to complete the data omitted by the authors. Two gasteromycetes, *Pisolithus tinctorum* and *Pseudocolus schellenbergiae,* are of interest because of their occurrence in this region.

The colors cited in quotation marks are from Ridgway (1912).

HYMENOMYCETES

Amanita cinereoconia Atkinson, Ann. Mycol. 7: 366. 1909. Plate 1249

Pileus 2.5–7 (–11) cm. broad, convex to broadly convex at first, soon expanding to plane, at times with a broad obtuse umbo, margin appendiculate with whitish, cottony fibrils from a partial veil, becoming appressed, surface dry, with numerous pyramidal warts (up to 2 mm. high) ± in concentric rings, texture soft and rather cottony, points finally eroded and leaving only irregular floccose patches, appressed near margin, color "fuscous," "hair brown," "smoke gray" on warts and patches, whitish to "pale smoke gray" between warts and patches; flesh thick on the disc, tinted pale fuscous near the pileus surface, whitish below, odor and taste not distinctive.

[1] Acknowledgment is made to the Faculty Research Council, University of Massachusetts, for financial support of my 1958 field program, and for bearing the cost of photographic plates in this paper.

Lamellae free but closely appressed to stipe, broad (up to 7 mm.), rounded at cap margin, narrowed at stipe, close, white, edges straight, fimbriate under a lens.

Stipe 3.5–17 cm. long, apex and medial portions 0.6–2.5 cm. in diameter, base napiform, bulbous portion 1–3 cm. broad, becoming ± equal in age, radicate portion 3–6 cm. long, central, solid (interior whitish), pale "fuscous" to "fuscous" at bulb, gradually paler to the whitish apex, apex and medial portions fibrillose to somewhat scabrous; volval remains evident as "fuscous" warts in three to five ± concentric rings on the bulb surface, finally appressed; annulus apical, thick, soft and cottony, white, usually adhering to stipe apex and cap margin, becoming appressed.

Spores 8.5–10 × 4.5–6.5 μ, usually elliptical (polymorphic at times and then oblong, pyriform, obovate, lacrymoid, 6.5–12 × 5–6.5μ), smooth, amyloid; basidia 27.5–42(–60) × (6.5–)9–11 (–12) μ, four-spored; cystidia not distinct from the numerous basidioles; pileus tissue: surface with numerous globose cells, 19–60 μ in diameter, contents brownish in KOH, wall smooth, slightly thickened, originating as cystidioid end cells, clavate at first, but finally inflated to globose and becoming free, cuticular hyphae cylindrical, 2–4.5 μ in diameter, hyaline in KOH, interwoven, appearing slightly gelatinous in KOH, tramal hyphae cylindrical to inflated, 5–17 μ in diameter, clamp connections present; gill trama divergent, hyphae cylindrical to inflated, 6–20 μ in diameter.

Solitary or gregarious, on soil in mixed woods or under conifers. Leverett, Amherst. August and September. *Bigelow 7360, 7543, 7650, 7756.*

This distinctive *Amanita* is well-known in more southerly regions. It was originally described from Chapel Hill, North Carolina. More recently, Hesler (1937) has collected the species in Great Smoky Mountains National Park.

In the field, the distinctive features of expanded specimens are: the gray warts and patches on the pileus and bulb of the stipe, the lack of membranous annulus or volva, the napiform and radicating stipe.

Dr. A. H. Smith of the University of Michigan has kindly confirmed the identity of my material.

Clitocybe fellea Peck, Ann. Rep't N. Y. State Mus. 51: 284. 1898.

Pileus 6–21 mm. broad, hemispherical at first, becoming convex, finally subplane and somewhat depressed, dry and somewhat shining, radiate-fibrillose to matted-fibrillose under a lens, finally minutely diffracted-scaly, a yellowish-tan to putty color (dingy "cream buff" to "chamois"); flesh thin, whitish, odor farinaceous, taste bitter but soon fading.

PLATE 1249. *Amanita cinereoconia*, × ⅔.

Lamellae broadly adnate for some time, finally short decurrent, close to nearly subdistant, broad (3–5 mm.), not forked or intervenose, whitish, edges even and straight.

Stipe 1.5–3.5 cm. long, 1–2 mm. thick at apex, equal or the base slightly enlarged, often curved and somewhat flexuous, solid, central, surface fibrillose-striate for some time, finally appressed, concolorous with the pileus.

Spores 6–8 (–9) × 4.5–5.5 μ, broadly elliptical, smooth, hyaline in KOH, not amyloid, white in mass; basidia 25–38.5 × 6.5–8 μ, four-spored; cystidia not differentiated; pileus tissue: cuticle yellowish in KOH, pigment present as very fine encrustations or in slightly thickened but smooth walls, hyphae cylindrical to somewhat inflated, 4.5–8 (–11) μ in diameter, surface often with projecting end cells but not organized into a distinct turf, trama hyaline, hyphae cylindrical to slightly inflated, (2–) 4.5–8 μ in diameter, clamp connections present; gill trama regular to subparallel, hyaline, hyphae cylindrical to slightly inflated, 3–13 μ in diameter.

Solitary, scattered to gregarious. On bare soil, Polytrichum, or in grass. In the open near conifers. Amherst, Sunderland, Leverett. June to September. *Bigelow 6514, 6515, 6605, 6714, 7191, 7488, 7576, 7630, 7731, 7804.*

Peck's (1898a) colored plate of *C. fellea* is an accurate representation. My material is similar in all respects with the illustration and description. Through the courtesy of Mr. Stanley J. Smith, I have also had the opportunity to make an examination of the type collection from Gansevoort, N. Y.

It is unusual that there are so few records of this species. The abundance of it throughout the collecting season of 1958 would certainly seem to indicate that this agaric is not rare. Possibly, the distribution is restricted to the northeast. Smith's (1944) report of *C. fellea* from Oregon is of another species, at present undetermined.

Clitocybe socialis (Fr.) Gillet, Lest Hyménomycètes, p. 159. 1874.

Pileus (0.5–) 1.5–4 cm. broad, convex to broadly convex at first with the margin incurved and slightly inrolled, edge white pubescent, expanding to plane with the margin remaining decurved for some time, in age becoming subrepand to elevated, rarely undulate, disc flat to somewhat umbonate or broadly depressed, surface dry and opaque, moist-appearing in wet weather but not hygrophanous, dull, innately subsilky-pulverulent, finally glabrous, color dark red at first ("dragon's-blood"), fading with age to dull pinkish (dull "coral pink," dull "flesh

pink," sordid "onion pink," "Japan rose"); flesh white, rather thin, odor and taste mild to rather disagreeable or subfarinaceous.

Lamellae short decurrent at first, finally moderately decurrent, close, thin, narrow, not easily separable from the pileus trama, rather brittle, at times forked and anastomosing, not intervenose, color whitish ("cartridge buff") at first, becoming buff ("cream color," "ivory yellow") in age, edges even and straight at first, becoming torn and undulate in age.

Stipe 1.5–4 cm. long, 2.5–5 (–11) mm. broad at the apex, tapering downward from a slightly enlarged apex, bases often connate by a tomentose-mycelioid covering and strigosity which is intergrown with grass and humus, usually slightly curved, solid (white and spongy within), central, surface with a faint bloom at first, becoming glabrous or innately fibrillose-striate, scurfy-lacerate in age, pale buff at base, concolorous with cap at apex.

Spores 4.5–5.5 × 2.5–3 μ, elliptical, smooth, not amyloid, white in mass; basidia 13–26 × 4–6 μ, four-spored; cystidia not differentiated; pileus tissue: surface of young specimens with a few cystidioid end cells, clavate-pedicellate, ± 15 × 7 μ, pigment evident in cell contents, becoming appressed in expanded specimens, cuticular hyphae cylindrical, 2–3 (–5) μ in diameter, tramal hyphae cylindrical to inflated, 3–12 (–18) μ in diameter, clamp connections present, a few scattered laticiferous hyphae present; gill trama regular to subparallel, hyphae cylindrical to inflated, 4–16.5 μ in diameter.

Gregarious to subcespitose on lawn. August and September. Amherst. *Bigelow 7591, 7760, 7722.*

The only other authentic specimens of *C. socialis* known previously in this country are those collected at Ann Arbor, Michigan by A. H. Smith and C. H. Kauffman. While a graduate student at the University of Michigan, I had the opportunity to examine this material. The Amherst collections cited above are identical in all respects except habitat with those from Michigan. Smith's and Kauffman's collections were made under pine or in a mixed stand of black locust and pine.

Hygrophorus basidiosus (Peck) Peck, Bull. N. Y. State Mus. 116: 57. 1907.

Pileus 1.5–4 cm. broad, convex to plane, subumbonate at times, glabrous, hygrophanous, grayish-brown when moist, fading to pale gray (no comparable colors in Ridgway), radiate-streaked in fading; flesh whitish, odor and taste not distinct.

Lamellae adnate to short decurrent, subdistant, broad, arched, thick, pale gray, edges even.

Stipe 3.5–5 cm. long, 4–7 mm. thick at apex, tapering downward to a slender base, solid becoming hollow, surface glabrous, white.

Spores 4–5.5 (–6) × 3–4.5 μ, subglobose, smooth, hyaline in KOH, not amyloid; basidia 31–45 × 5–6.5 μ, four-spored, sterigmata 5–9 μ long, curved; cystidia not differentiated; pileus tissue: surface not gelatinous in KOH, cuticular hyphae cylindrical, 1–3 μ in diameter, tramal hyphae mostly cylindrical, 2–6 μ in diameter, clamp connections present; gill trama interwoven, hyphae cylindrical, 2–4.5 μ in diameter.

Gregarious in sphagnum in bog. Leverett. August. *Bigelow 7503.*

Peck's (1887) orginal description of *Clitocybe basidiosa* states the lamellae are "whitish with a violaceous tint." When fresh, the lamellae of no. 7503 were pale gray without a violaceous tint. Peck further describes *C. basidiosa* as possessing a depressed pileus adding in his notes following that the pileus is "rarely slightly umbonate." The pilei of my collection were plane and subumbonate at times. As dried, my specimens are pale grayish not the very pale buff of Peck's type. In other respects, there is agreement. I found the spores of the type specimens to be slightly larger, 4.5–5.5(–6) × 4.5 μ, than the measurements reported by Smith and Hesler (1942).

Hygrophorus basidiosus is most closely related to *H. albipes* Peck. As described by Peck (1898b), *H. albipes* is a smaller agaric, with pileus 1.2 cm. broad, stipe 2.5–3.5 cm. × 3–5 mm. The gills are narrow, not broad as in *H. basidiosus*. Smith and Hesler found that the type specimens of *H. albipes* possessed a thin gelatinous pellicle. The surface of *H. basidiosus* is merely filamentous. Other features of the two species are nearly identical.

Hygrophorus flavodiscus Frost, in Peck, Ann. Rep't N. Y. State Mus. 35: 134. 1884. Plate 1250.

Pileus 2–6 cm. broad, convex at first with an incurved margin, expanding to broadly convex, finally plane and shallowly depressed, margin with white fibrils of partial veil, not striate, surface glutinous from the universal veil, gluten finally drying in radiating streaks, "orange buff" on the disc, paler toward margin and "pale orange buff" to "cream buff," edge whitish; flesh white, firm, odor and taste not distinctive.

Lamellae adnate to short decurrent at first, becoming moderately or long decurrent, subdistant to distant, moderately broad (2–6 mm.), occasionally forked and anastomosing, usually intervenose and the sides

PLATE 1250. *Hygrophorus flavodiscus*, × 1.

of the lamellae venose, a distinct pinkish flush present at first ("pale pinkish cinnamon") fading to whitish, edges even and straight.

Stipe 3–7.5 cm. long, 6–14 mm. thick at the apex, equal or tapering downward, solid (whitish and firm inside), eccentric at times, sheathed nearly to apex with glutinous universal veil and ending in an obscure annulus, whitish with pale orange-yellow tint, fibrillose to somewhat scabrous above the gluten, innately fibrillose beneath the gluten.

Spores 6–8 × 3–4 (–4.5) μ, elliptical to elliptic-oblong, smooth, hyaline in KOH, not amyloid; basidia 32–52 × 6–8 μ, four-spored; cystidia not differentiated; pileus tissue: pellicle gelatinous, thick, yellow in KOH, pigment intercellular and intracellular, hyphae cylindrical, 2–4 μ in diameter, trama hyaline, hyphae cylindrical to inflated, 5.5–18.5 μ in diameter, clamp connections present throughout; gill trama divergent, hyaline, hyphae cylindrical to slightly inflated, 2.5–8 (–13) μ in diameter.

Gregarious to cespitose under white pine. Leverett. November. *Bigelow 7957, 7958, 7974.*

The study of abundant material of this species both in the fresh and dried conditions confirms the observations of Smith and Hesler (1939), which were based upon a study of the type. I have also had the opportunity to examine Peck's type at Albany.

Smith and Hesler also indicate that *H. flavodiscus* should be compared with *H. melizeus* Fr. I have not had the opportunity to examine authentic material of *H. melizeus*. However, *H. flavodiscus* does not become pallid ochraceous throughout as Fries (1836-1838) emphasizes for *H. melizeus*. Only the pileus of *H. flavodiscus* becomes ochraceous in drying. The lamellae fade from pinkish to white, and remain so in drying. The stipe is tinted with pale orangish-yellow when fresh. At times this color remains when the specimens are dried, but often the stipe fades to whitish like the lamellae. Kühner and Romagnesi (1953) describe *H. melizeus* from unpublished notes of J. Favre. They state that this agaric has a pileus which is pale alutaceous, beige or beige-chamois, recalling a small Hebeloma; gills and stipe tinted with the same colors; stipe dry; flesh becoming sordid brown in KOH. These characters do not apply to *H. flavodiscus*. Kühner and Romagnesi suggest that *H. chrysaspis* Métrod is close to *H. flavodiscus*. The two species are perhaps related, but certainly not identical. *H. flavodiscus* does not become reddish-brown as the other. Habitat and the spore width do not agree either.

H. flavodiscus seems most closely related to *H. gliocyclus* Fr. for both species show indications of a partial veil. I believe the two can be separated most easily on characters of the gills and spores. *H. gliocyclus* has yellowish, narrow gills and spores 7–9 (–11) × 5–6 μ, as described by Smith and Hesler (1939).

Gasteromycetes

Pisolithus tinctorum (Pers.) Coker & Couch, Gasteromycetes of the eastern United States and Canada, p. 170. 1928.

Three fruiting bodies (*Bigelow 7774*) were found near one another on an old sawdust pile at Mt. Toby, the University reservation in Leverett and Sunderland.

This unusual fungus is fairly common in the Pacific northwest and in the southeastern United States, but is apparently rare in the northeast. Specimens found on Cape Cod are deposited at the Farlow Herbarium, but there are no previous records of this fungus occurring in western Massachusetts.

Pseudocolus schellenbergiae (Sumstine) Johnson, Bull. Ohio Biol. Survey 4: 338. 1929.

On two occasions single fruiting bodies were discovered on the same site near the University campus. These were growing in mixed woods on wet soil and humus. *Bigelow 6950* was collected July 19; *Bigelow 7723* on September 11. The field characteristics and microscopic features are typical of the species.

As far as I can determine, the Amherst collections represent the most northern occurrence of the species reported thus far. According to Snell and Dick (1956), Mrs. Sybil Curtis found *P. schellenbergiae* near Worcester.

This fungus is well discussed in the literature, and has been reported previously from Pennsylvania, New York, New Jersey, and Rhode Island. Some investigators believe *P. schellenbergiae* to be identical with *P. javanicus* (Penzig) Lloyd. If this is true, the latter name has priority. — DEPT. OF BOTANY, UNIV. OF MASSACHUSETTS, AMHERST.

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SEPAROTHECA, A NEW GENUS (COMMELINACEAE) FROM MEXICO

U. T. Waterfall

While collecting in Mexico in August 1956, the author found in pine woods in the Sierra Madre southwest of El Salto, Durango, a dwarf member of the Commelinaceae only 3-7 cm. high, growing from small, succulent, elongate, tuber-like roots. It has few flowers, with the inflorescence subtended and enfolded by opposite, or subopposite, ovate-falcate to ovate-attenuate foliaceous bracts which are longer than the few cauline leaves.

Examination showed it to have separate sepals which are nearly hyaline, with a few long hairs at their apices and along the outside of the upper parts of their midribs. The corolla is sympetalous with a tube 6-8 mm. long, and lobes 5-8 mm. long, ovate to ovate-lanceolate. The 6 stamens are fertile, with filaments 1–3 mm. long, filiform to flattened, sometimes somewhat spiralled or twisted, inserted on the lower part of the corolla